Amendment to the Claims

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

1. (cancelled).

2. (Currently amended) The method of claim [[1]] 10, further comprising culturing the cells until they synthesize a desired amount of extracellular matrix.

3. (Cancelled)

4. (Currently amended) The method of claim [[1]] 10, wherein the matrix comprises a member of a synthetic or a non-synthetic material.

5. (Previously presented) The method of claim 4, wherein the matrix comprises a member of poly(glycolic acid), collagen-glycosaminoglycan, collagen, poly(lactic acid), poly(lactic-co-glycolic acid), poly(anhydride), poly(hydroxy acid), poly(orthoester), poly(propylfumerate), polysaccharide, polypyrrole, polyaniline, polythiophene, polystyrene, polyester, polyurethane, polyurea, poly(ethylene vinyl acetate), polypropylene, polymethacrylate, polyethylene, poly(ethylene oxide), poly(carbonate), and any combination thereof.

6. (Original) The method of claim 5, wherein the synthetic matrix comprises poly(glycolic acid).

7. (Currently amended) The method of claim [[1]] 10, wherein the cells are human cells.

8. (Currently amended) The method of claim [[1]] 10, wherein the cells are selected from chondrocytes, hepatocytes, Islet cells, nerve cells, muscle cells, bone forming cells, fibroblasts, endothelial cells, stem cells, connective tissue stem cells, mesodermal stem cells, and epithelial cells.

9. (Original) The method of claim 8, wherein the cells are chondrocytes.

10. (Currently Amended) ~~The method of claim 1, wherein the material that promotes cell adhesion comprises~~A method of assembling a tissue engineered construct, comprising:

transfecting a plurality of mammalian cells with a gene for a growth factor; and

seeding the transfected cells onto a biocompatible matrix comprising a first biocompatible material and a second biocompatible material, wherein the second biocompatible material is selected from one or more of integrins, cell adhesion molecules, cell adhesion sequences, basement membrane components ~~or derivatives thereof~~, laminin, fibronectin, agar, agarose, collagen, glycosaminoglycans, poly(vinyl alcohol), amino acids, polymers of amino acids, and collagen ~~or combinations thereof~~.

11. (Currently amended) The method of claim [[1]] 10, further comprising adding a cell metabolism regulator to the matrix.

12. (Currently amended) The method of claim [[1]] 10, wherein the growth factor is a protein.

13. (Original) The method of claim 12, wherein the growth factor is selected from TGF-β, TGF-α, acidic fibroblast growth factor, basic fibroblast growth factor, epidermal growth factor, IGF-I and II, vascular endothelial-derived growth factor, bone morphogenetic proteins, hepatocyte, platelet-derived growth factor, heparin binding growth factor, hematopoetic growth factor, and peptide growth factor.

14. (Original) The method of claim 13, wherein the growth factor is insulin-like growth factor I.

15. (Currently amended) The method of claim [[1]] 10, wherein transfection is accomplished without a viral vector.

16. (Original) The method of claim 15, wherein transfection comprises use of a lipid-based delivery system.

17. (Currently amended) The method of claim [[1]] 10, wherein transfection is accomplished with a viral vector.

18. (Currently Amended) A tissue engineered construct, comprising:

a mammalian cell transfected with a gene for a growth factor; and

a biocompatible synthetic matrix comprising a first biocompatible material and a second biocompatible material, wherein the second biocompatible material is selected from one or more of cell adhesion molecules, integrins, cell adhesion sequences, basement membrane components, laminin, fibronectin, agar, agarose, collagen, glycosaminoglycans, poly(vinyl alcohol), amino acids, and polymers of amino acids~~, wherein the biocompatible matrix is coated with a material that promotes cell adhesion~~.

19. (Original) The tissue engineered construct of claim 18, wherein the cell is a chondrocyte.

20. (Original) The tissue engineered construct of claim 18, wherein the synthetic matrix comprises poly(glycolic acid).

21. (Original) The tissue engineered construct of claim 18, wherein the growth factor is insulin-like growth factor I.

22 through 42. (Withdrawn)

43. (Currently amended) A tissue engineered construct, comprising:

a chondrocyte transfected with a gene for insulin-like growth factor I; and

a biocompatible synthetic matrix comprising a first biocompatible material and a second biocompatible material, wherein the second biocompatible material is selected from one or more of cell adhesion molecules, integrins, cell adhesion sequences, basement membrane components, laminin, fibronectin, agar, agarose, collagen, glycosaminoglycans, poly(vinyl alcohol), amino acids, and polymers of amino acids.

44. (Previously presented) The tissue engineered construct of claim 43, wherein the synthetic matrix comprises poly(glycolic acid).

45. (Previously presented) A method of assembling a tissue engineered construct, comprising transfecting a plurality of chondrocytes with a gene for insulin-like growth factor I.

46. (Withdrawn).

47. (Previously presented) The method of Claim 45, further comprising the step of seeding the transfected cells onto a biocompatible matrix.

48. (Currently amended) A tissue engineered construct, comprising:

a mammalian cell transfected with a gene for a growth factor, wherein the mammalian cell is selected from the group consisting of hepatocytes, Islet cells, and endothelial cells; and

a biocompatible synthetic matrix comprising a first biocompatible material and a second biocompatible material, wherein the second biocompatible material is selected from one or more of cell adhesion molecules, integrins, cell adhesion sequences,

basement membrane components, laminin, fibronectin, agar, agarose, collagen, glycosaminoglycans, poly(vinyl alcohol), amino acids, and polymers of amino acids.

49. (Previously presented) The tissue engineered construct of claim 48, wherein the synthetic matrix comprises poly(glycolic acid).

50. (Previously presented) A method of assembling a tissue engineered construct, comprising transfecting a plurality of mammalian cells with a gene for a growth factor, wherein the cells are hepatocytes, Islet cells, or endothelial cells.

51. (Withdrawn)

52. (Previously presented) The method of Claim 50, further comprising the step of seeding the transfected cells onto a biocompatible matrix.